CS232F: Programming Languages
II semester 2001-02

Assignment 1: Binary search trees
Submission Deadline: 22 Jan 2002
Freeze Deadline: 31 Jan 2001

Write a Prolog program to create and manipulate *binary search trees* on integers. Your program should be in a single file and it should contain the following predicates and constructors. Assume binary search trees of integers are elements of the type *bstree*

- **create**: *bstree*. Creates an empty binary search tree.
- **empty**: *bstree* The constructor for an empty binary search tree.
- **node**: *int * bstree * bstree*. Creates a new binary search tree from an integer and two other binary search trees.
- **lookup**: *int * bstree*. Determines whether a given integer is present in a given binary search tree.
- **insert**: *int * bstree * bstree*. Inserts a new integer into a binary search tree to yield another.
- **deletemin**: *bstree * int * bstree*. Determines the minimum element and deletes it to yield another binary search tree.
- **delete**: *int * bstree * bstree*. Deletes an element from a binary search tree and yields the resulting binary search tree.